

FIGURE 1

# Rotor Angle Estimation

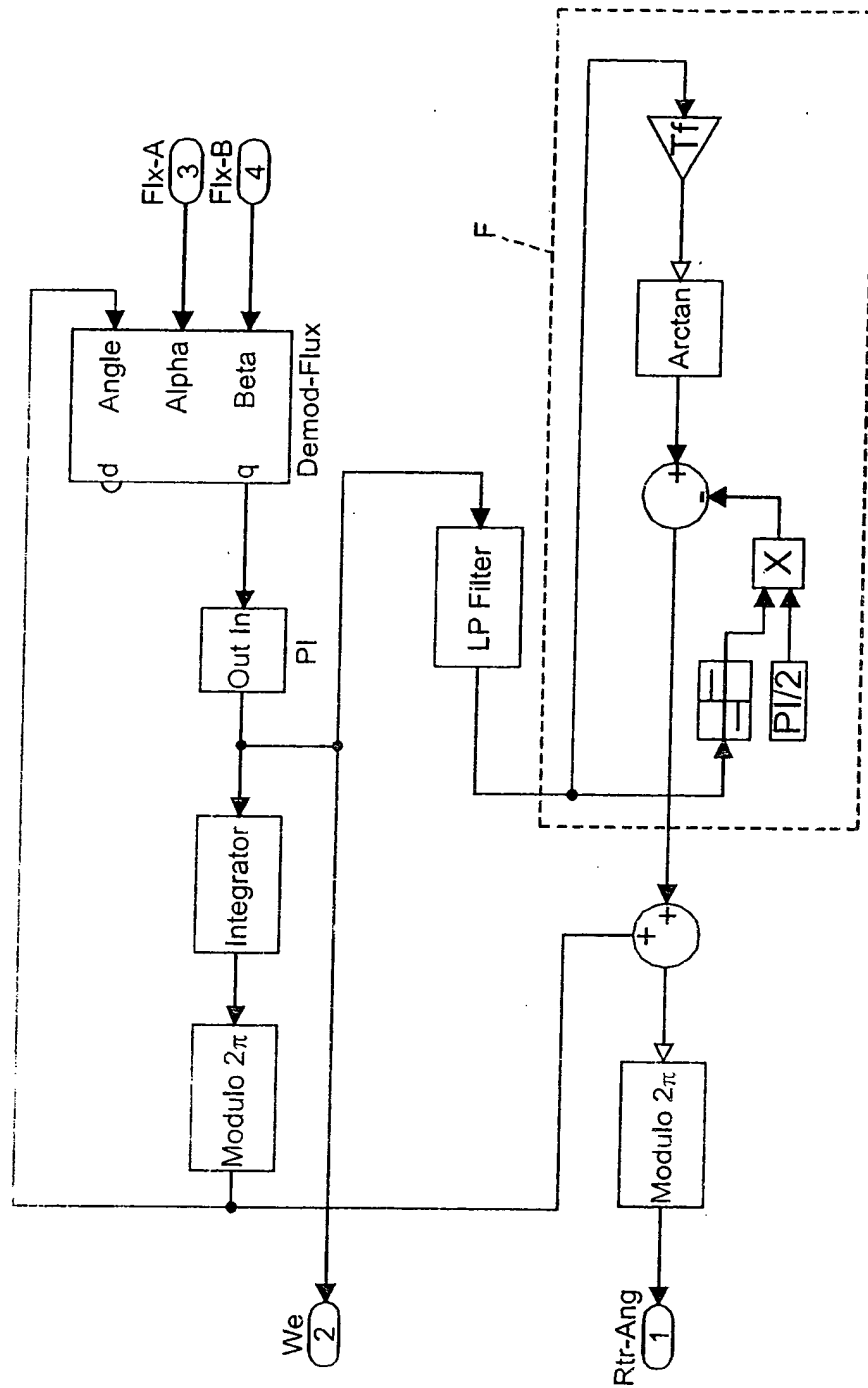


FIGURE 2

# Magnet Flux Estimation

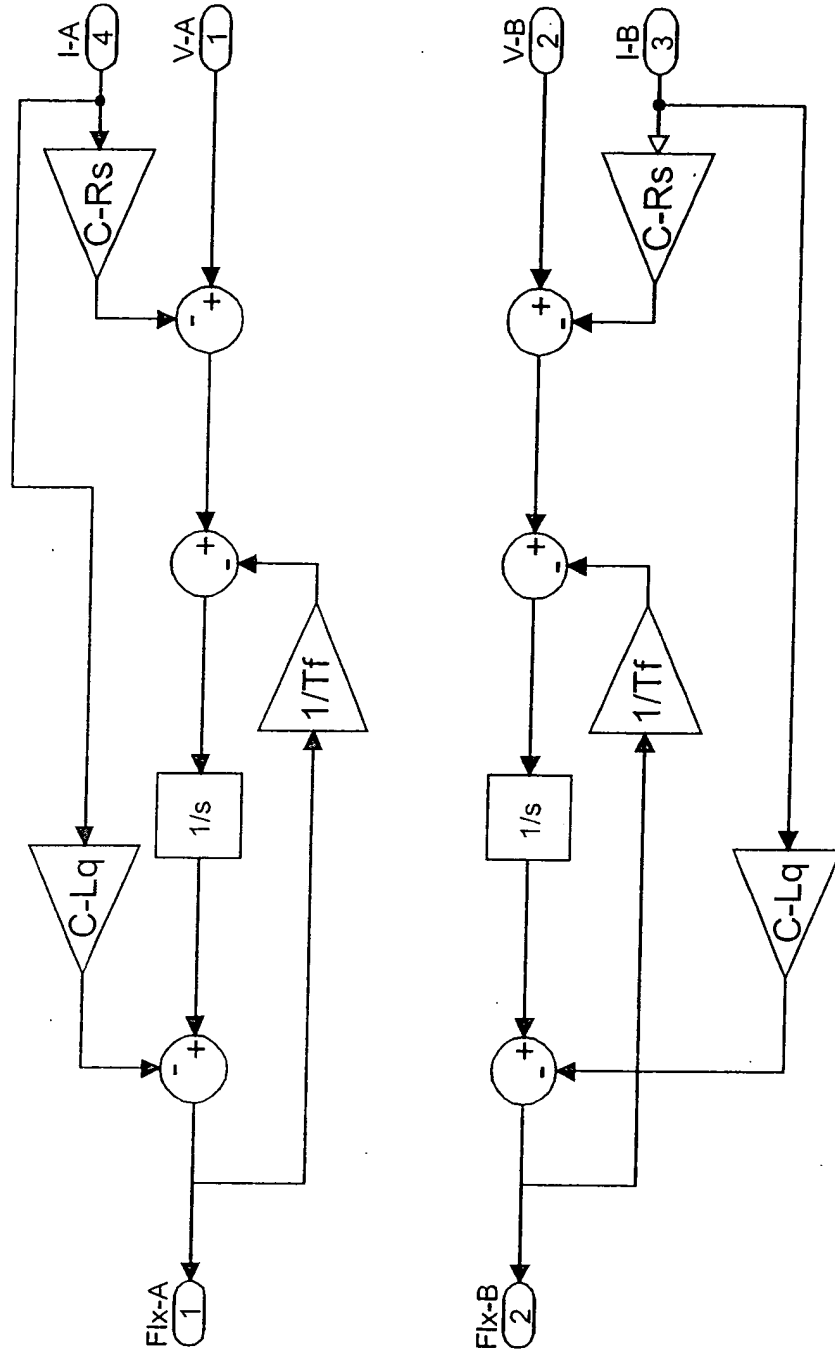


FIGURE 3

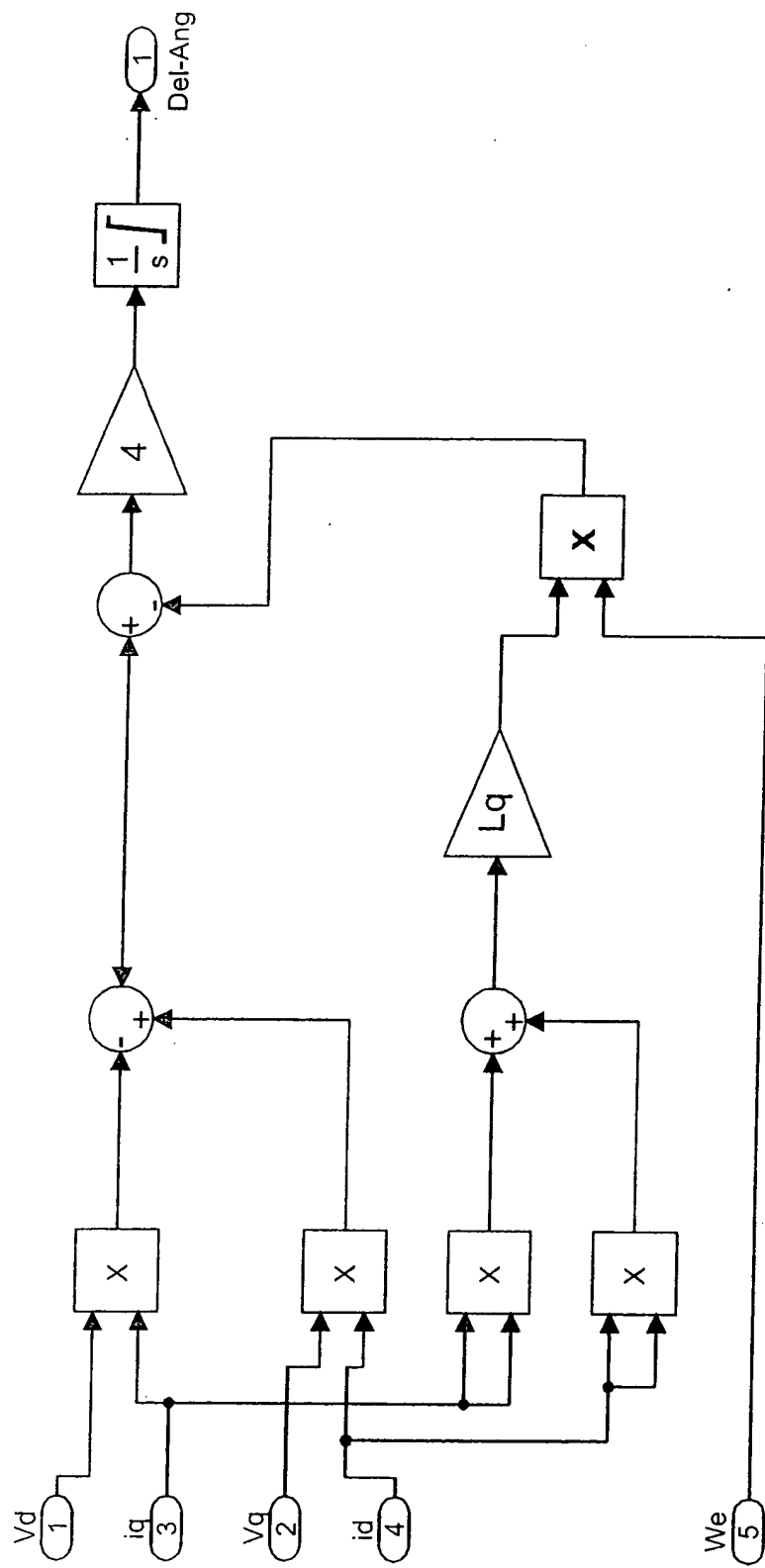


FIGURE 4

FIG. 5 Reactive power error vs Rotor angle error

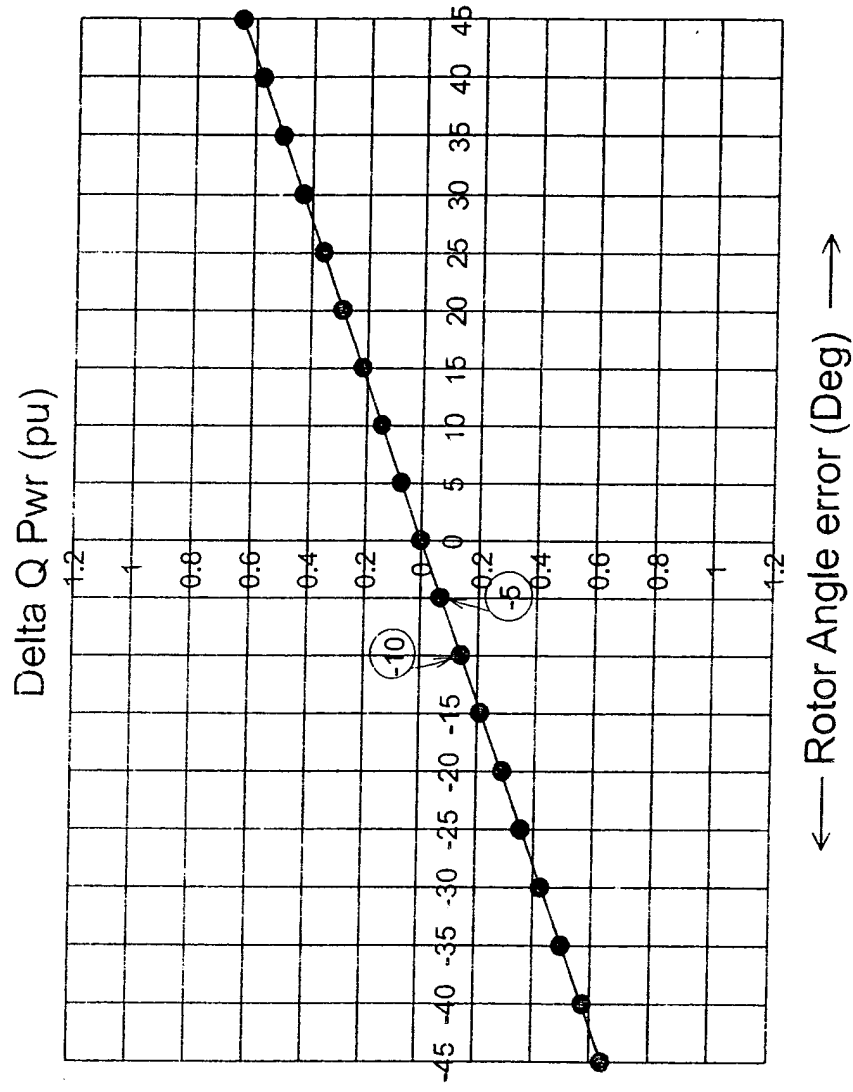


FIGURE 5

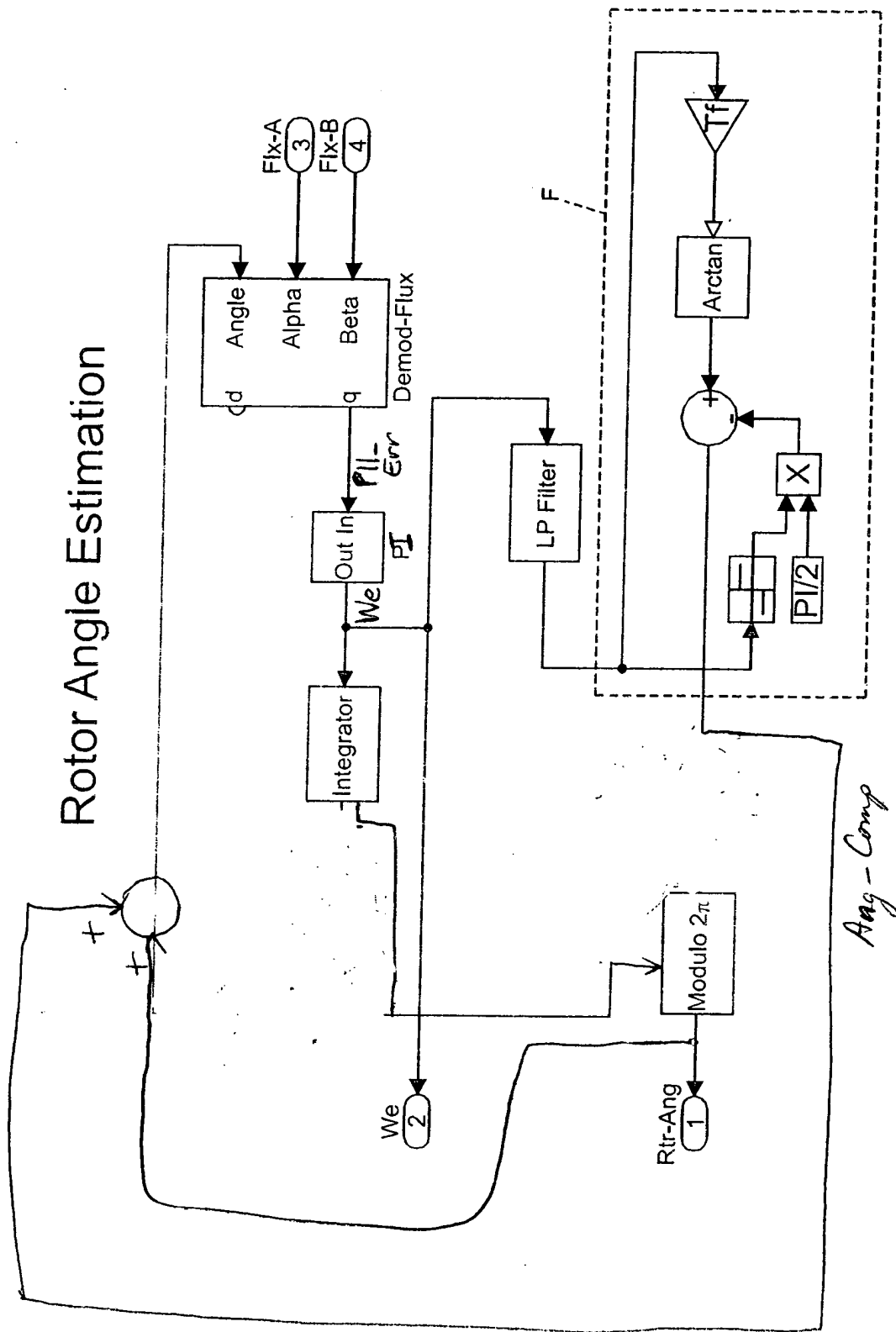


FIGURE 6

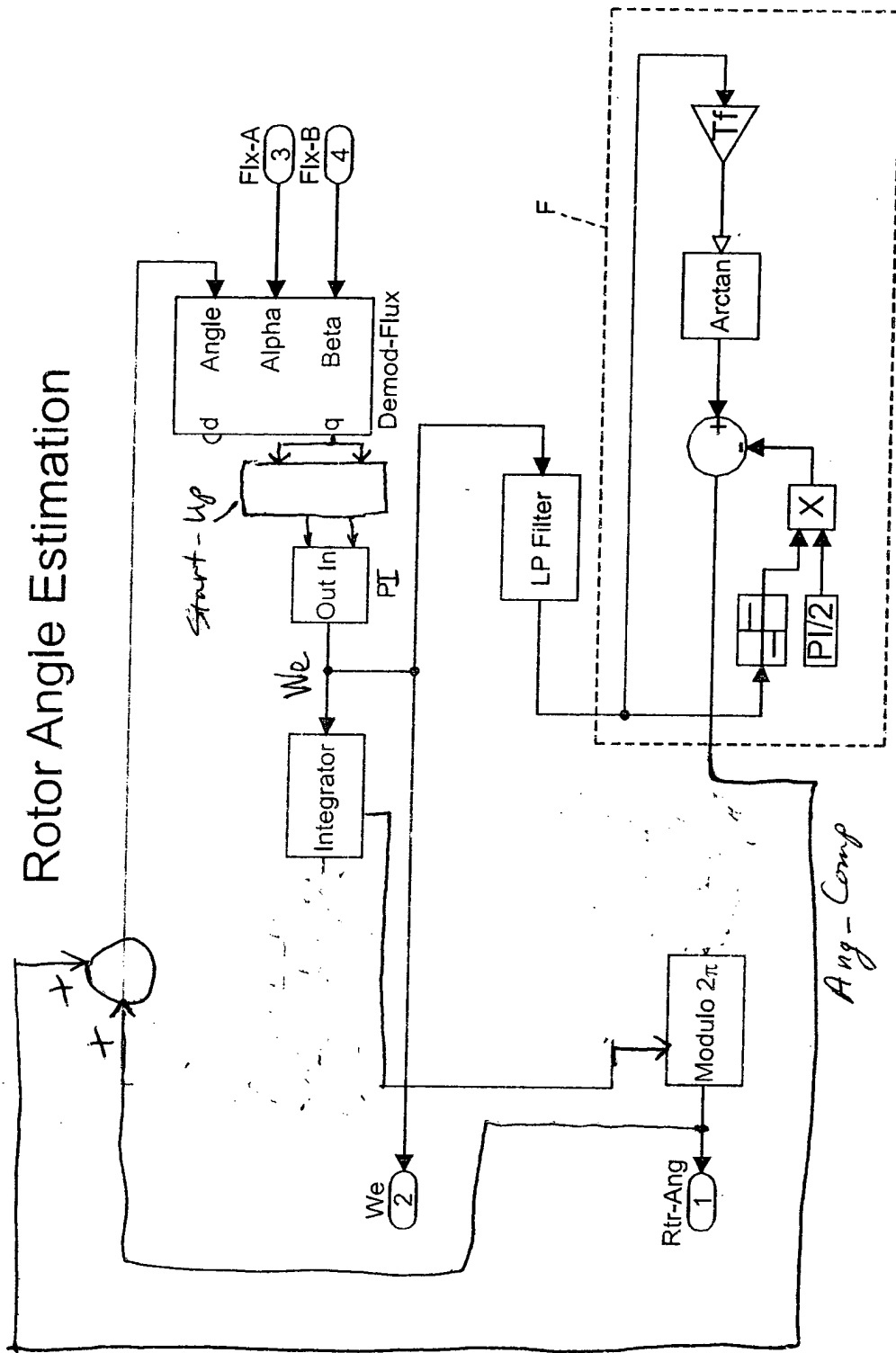


FIGURE ~~7~~ 7



**Fig. 8. Interface of Start-up module to PLL angle tracking module**